

ANIMAL MODEL

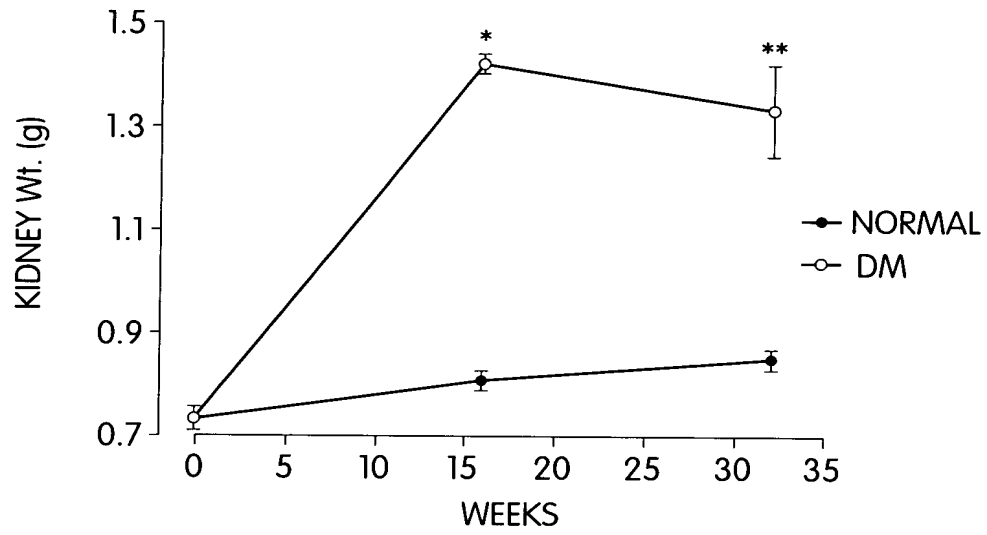


Fig. 1A

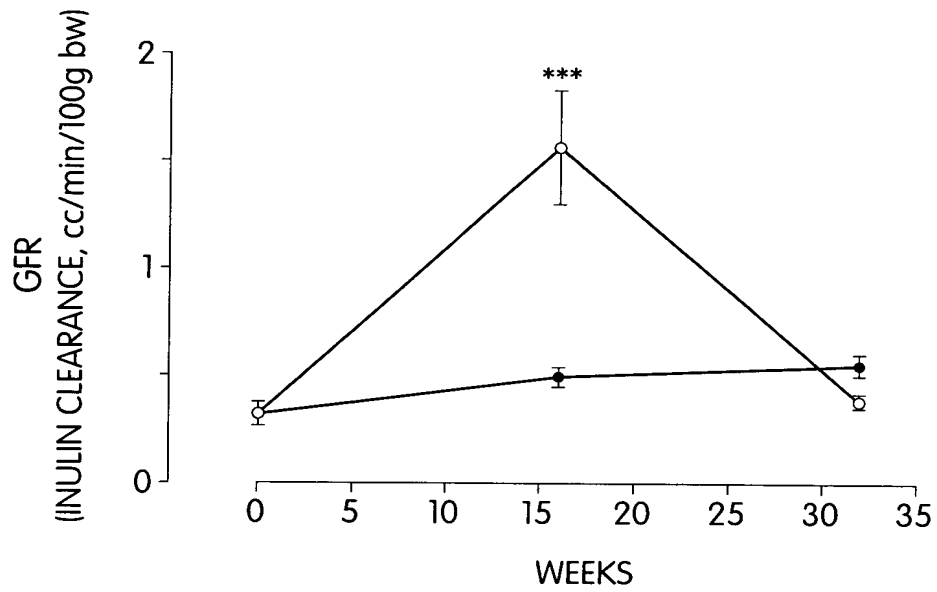


Fig. 1B

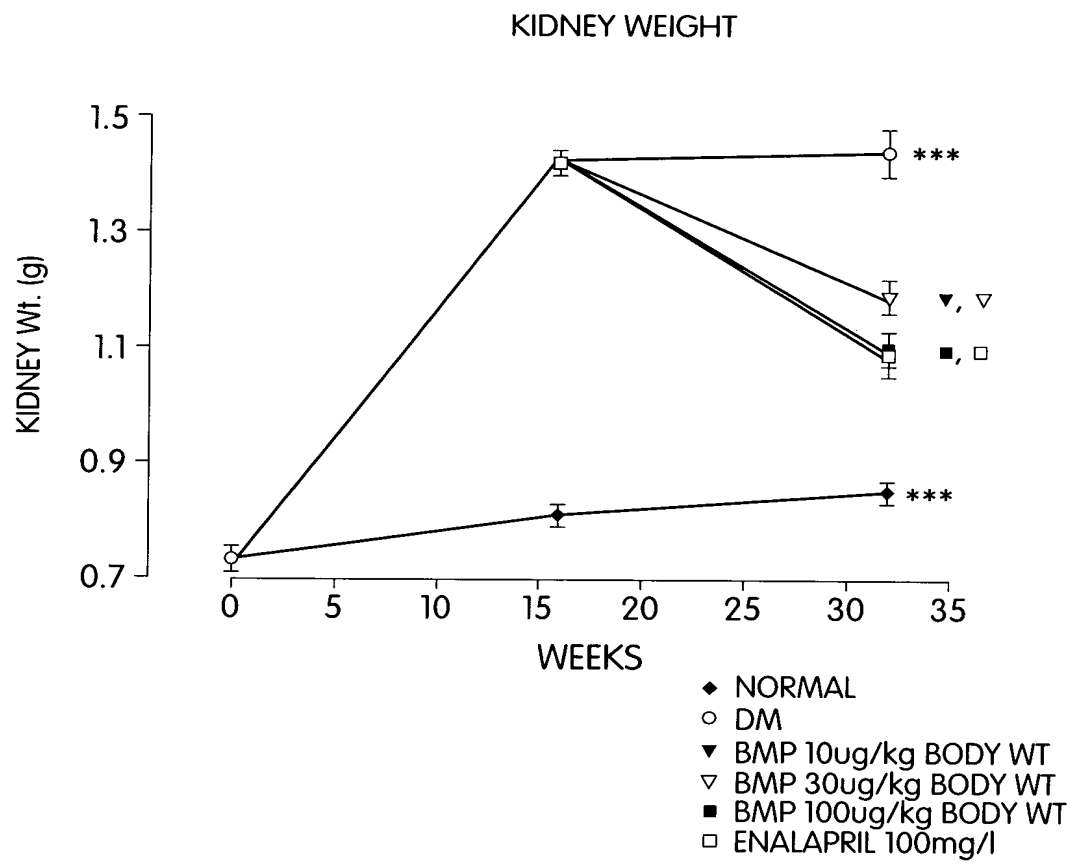


Fig. 2

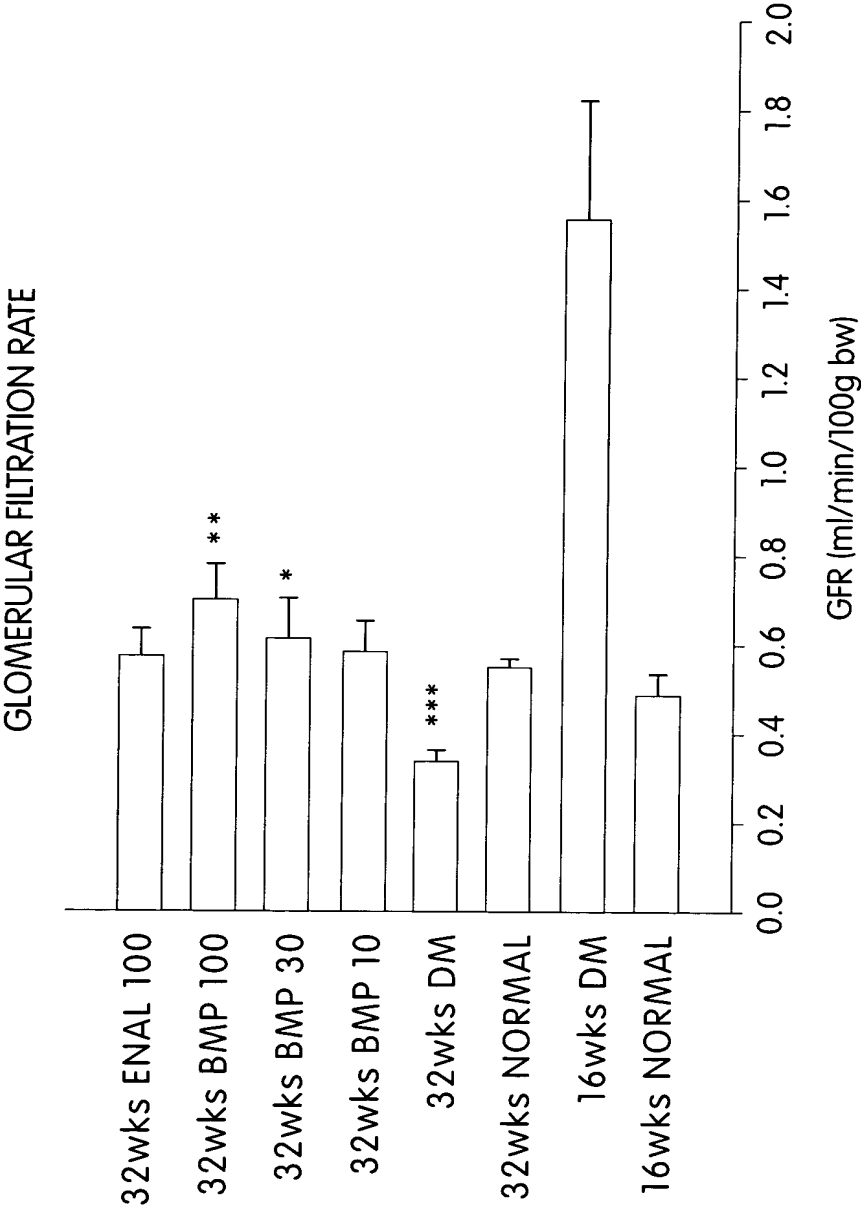


Fig. 3

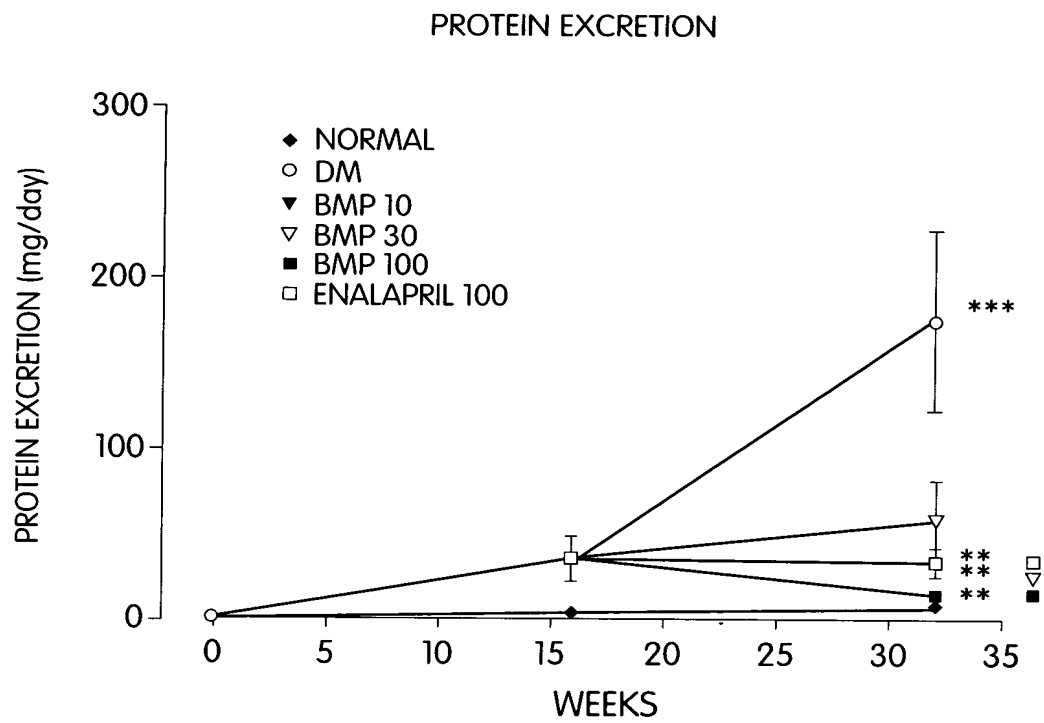


Fig. 4



Fig. 5A

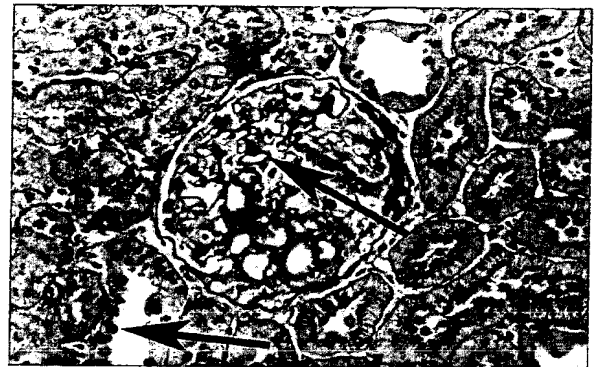


Fig. 5B

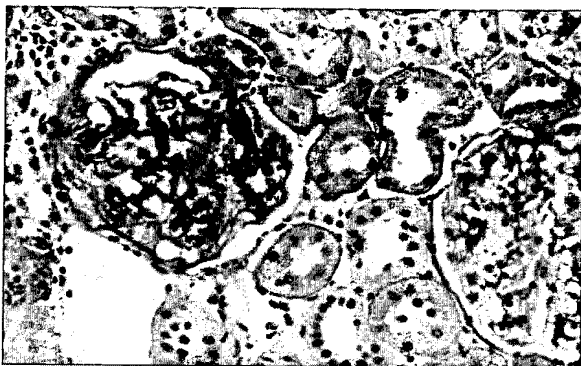


Fig. 5C

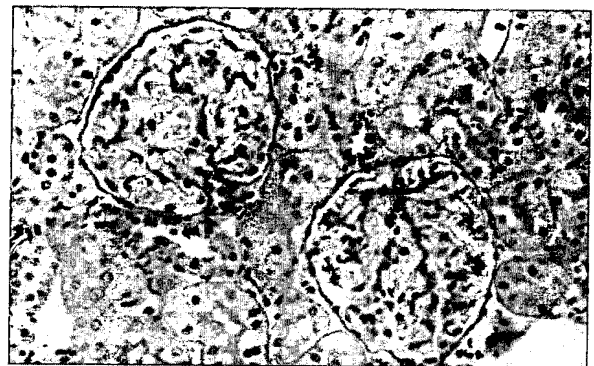


Fig. 5D

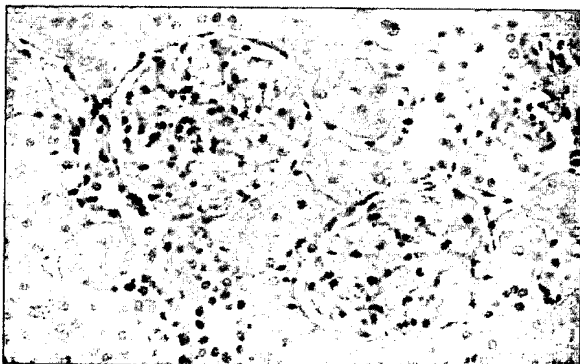


Fig. 5E

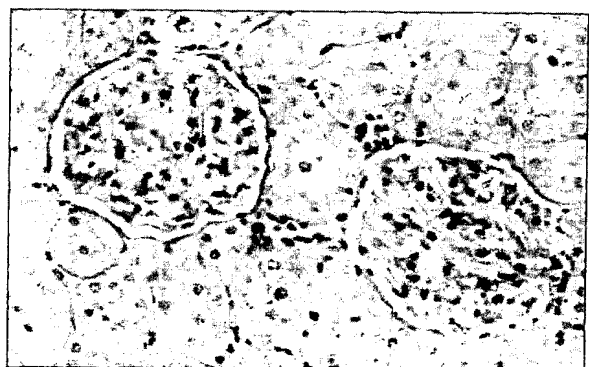


Fig. 5F

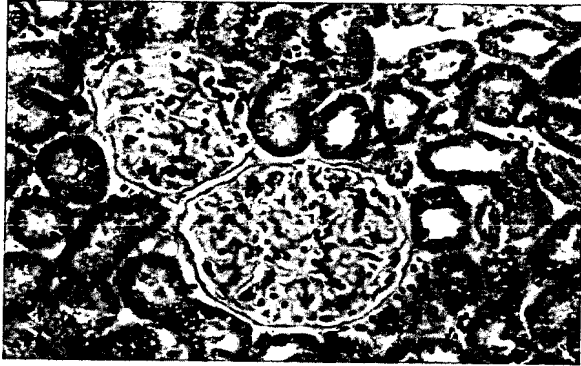


Fig. 6A



Fig. 6B



Fig. 6C



Fig. 6D

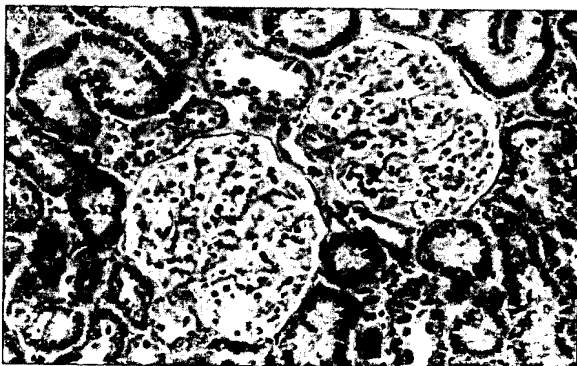


Fig. 6E

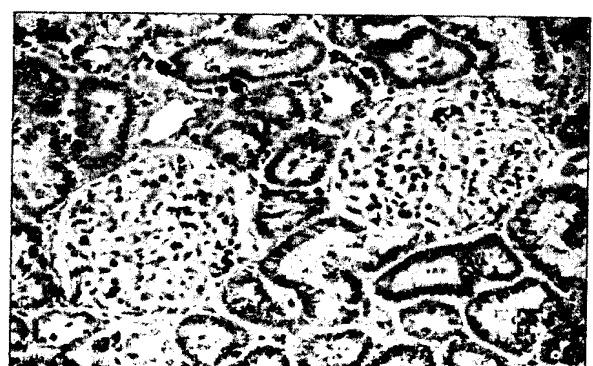


Fig. 6F

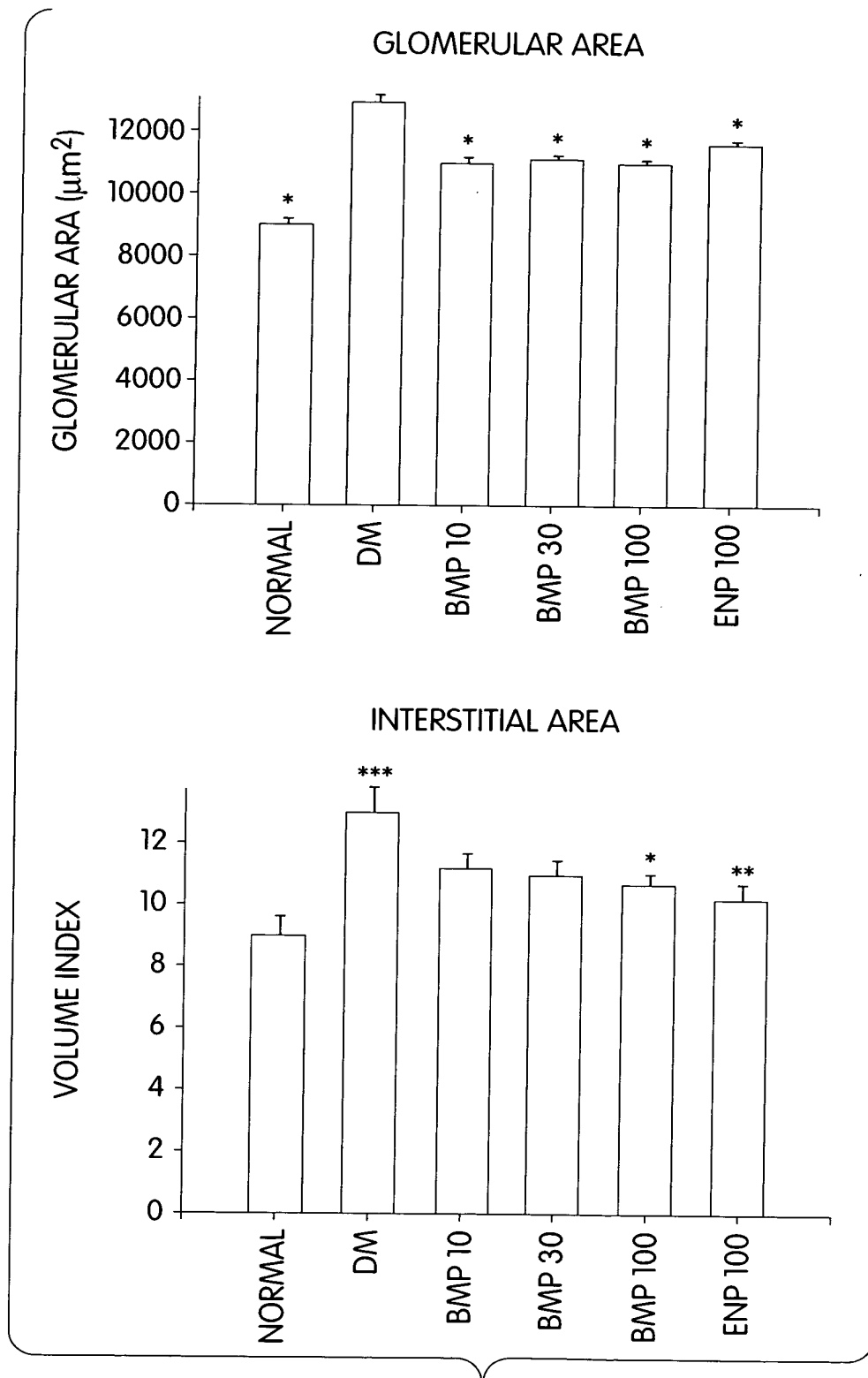


Fig. 7

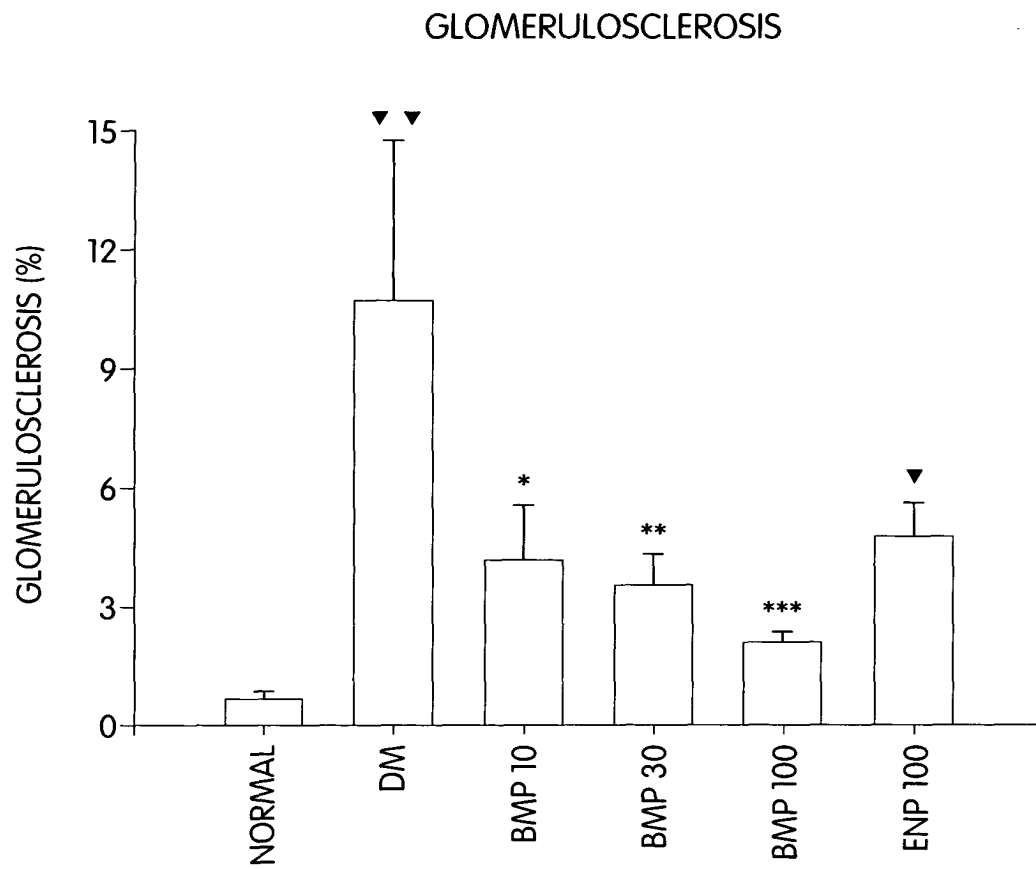


Fig. 8

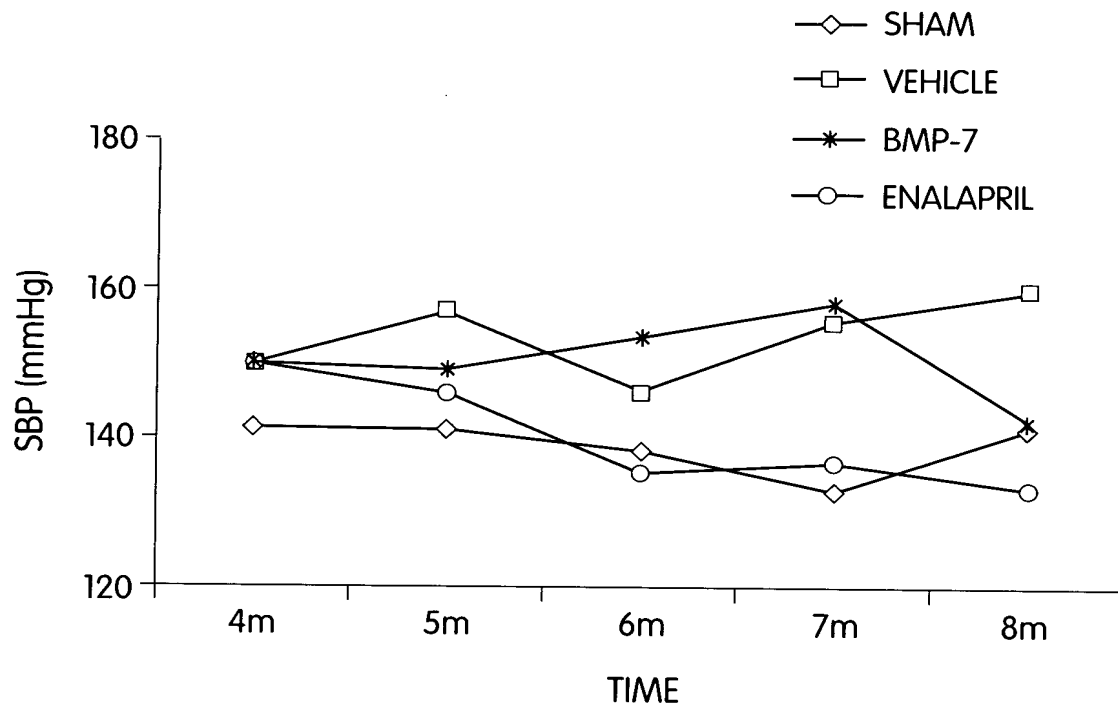
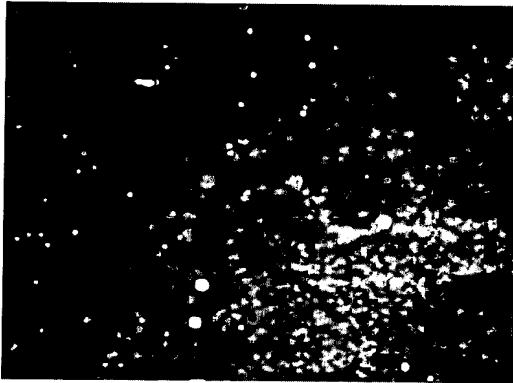


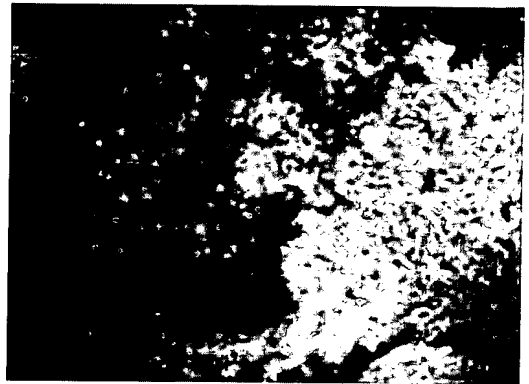
Fig. 9

BMP-7 EXPRESSION

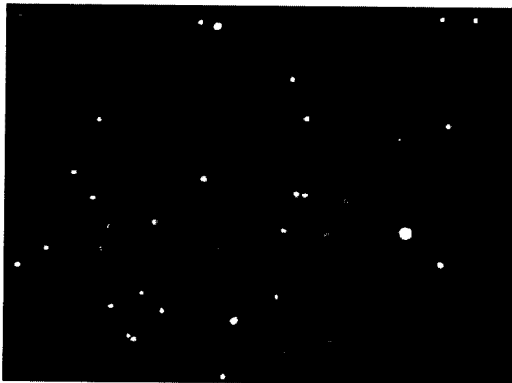
NORMAL 32 WEEKS



BMP-7 TREATED DM



DM 32 WEEKS



ENALAPRIL TREATED DM

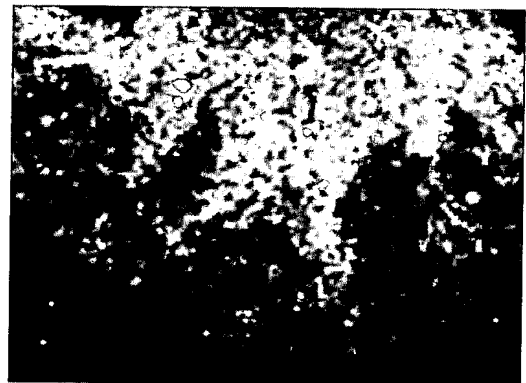


Fig. 10A

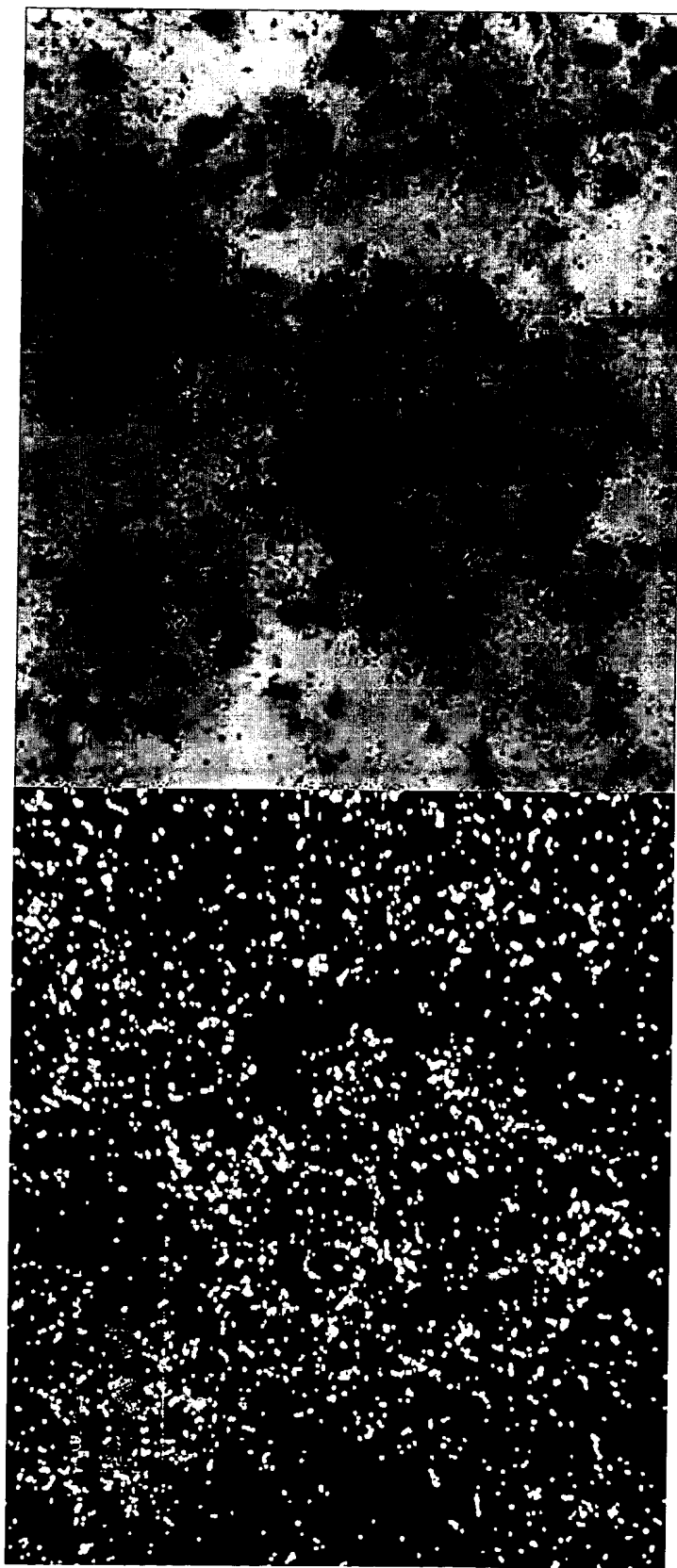


Fig. 10B

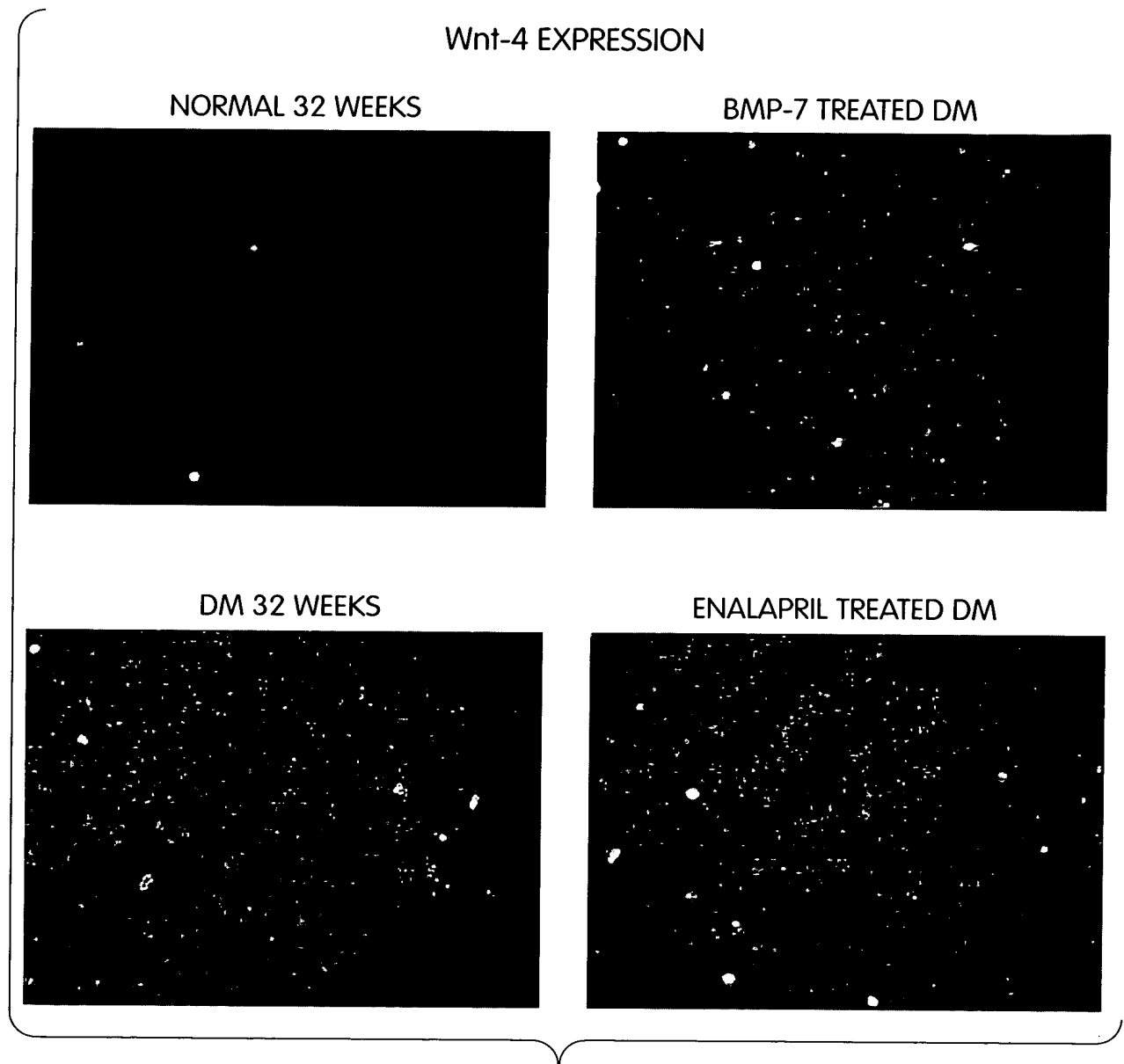


Fig. 11

FIVE SIXTHS NEPHRECTOMY
CHRONIC RENAL FAILURE INJURY MODEL

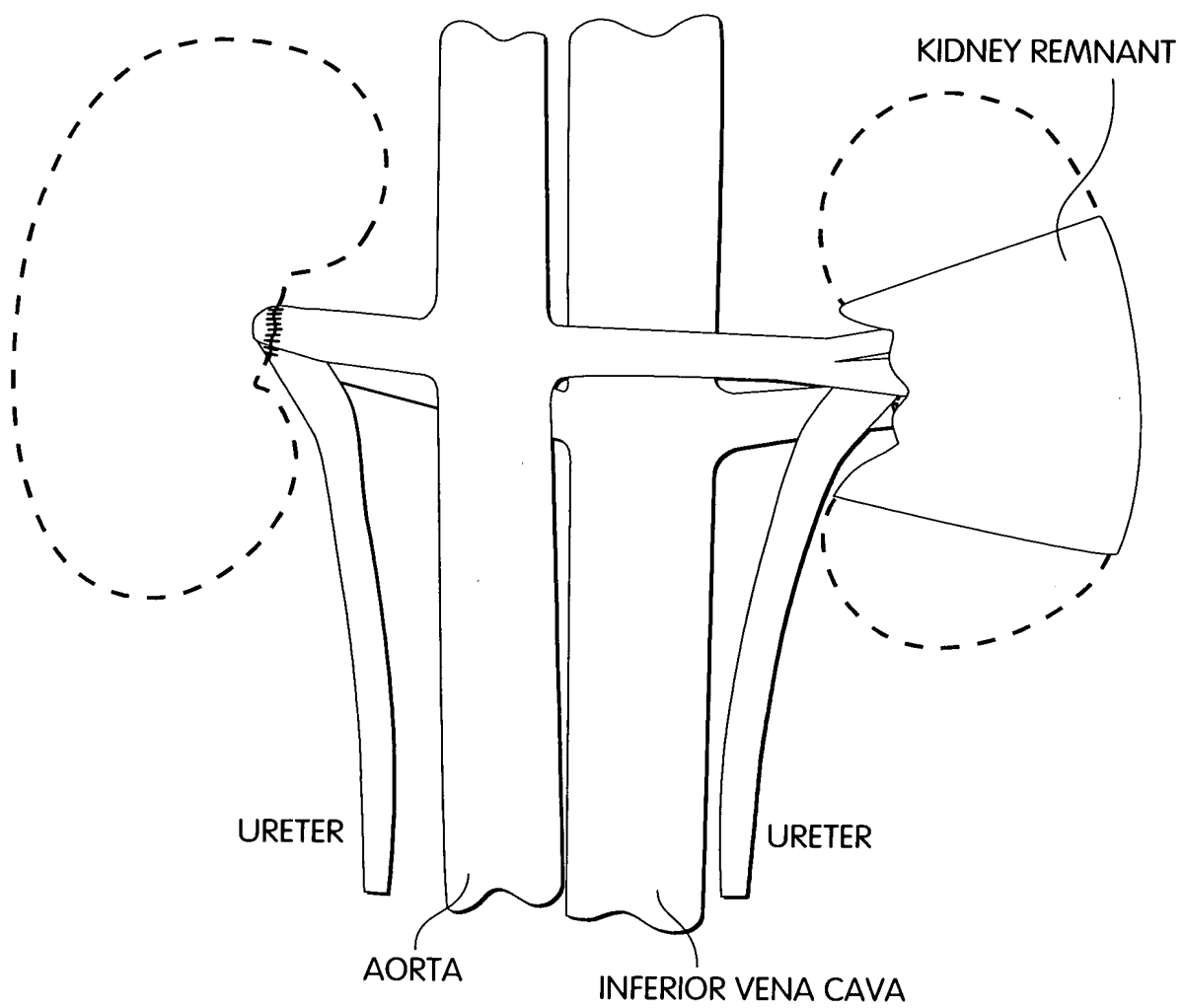
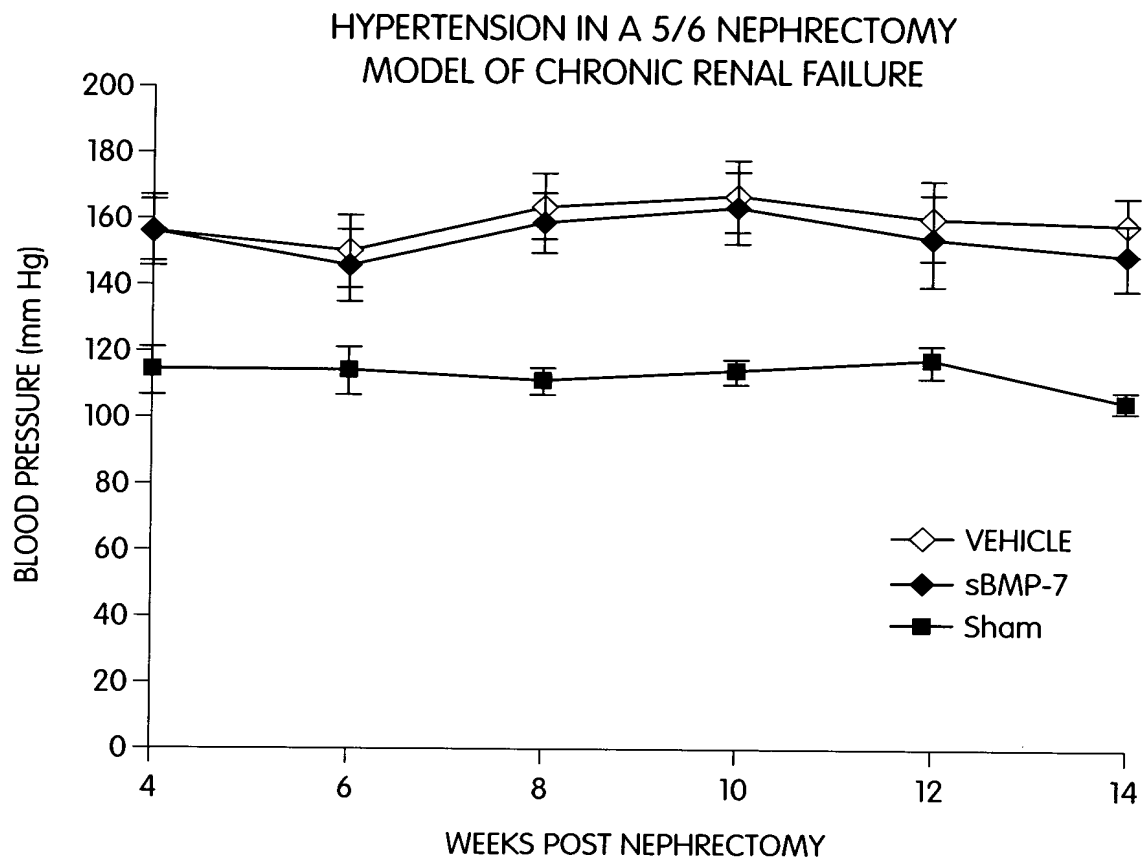
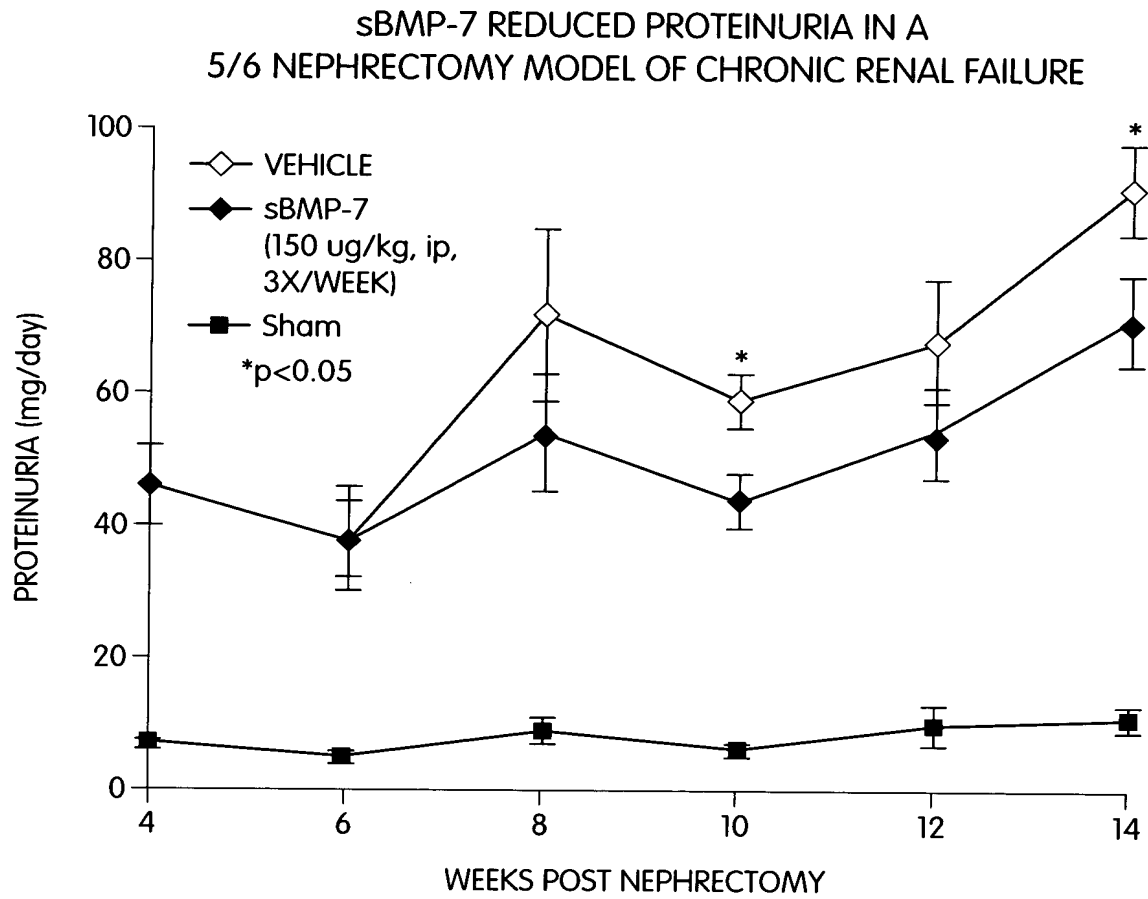


Fig. 12

**Fig. 13**

**Fig. 14**

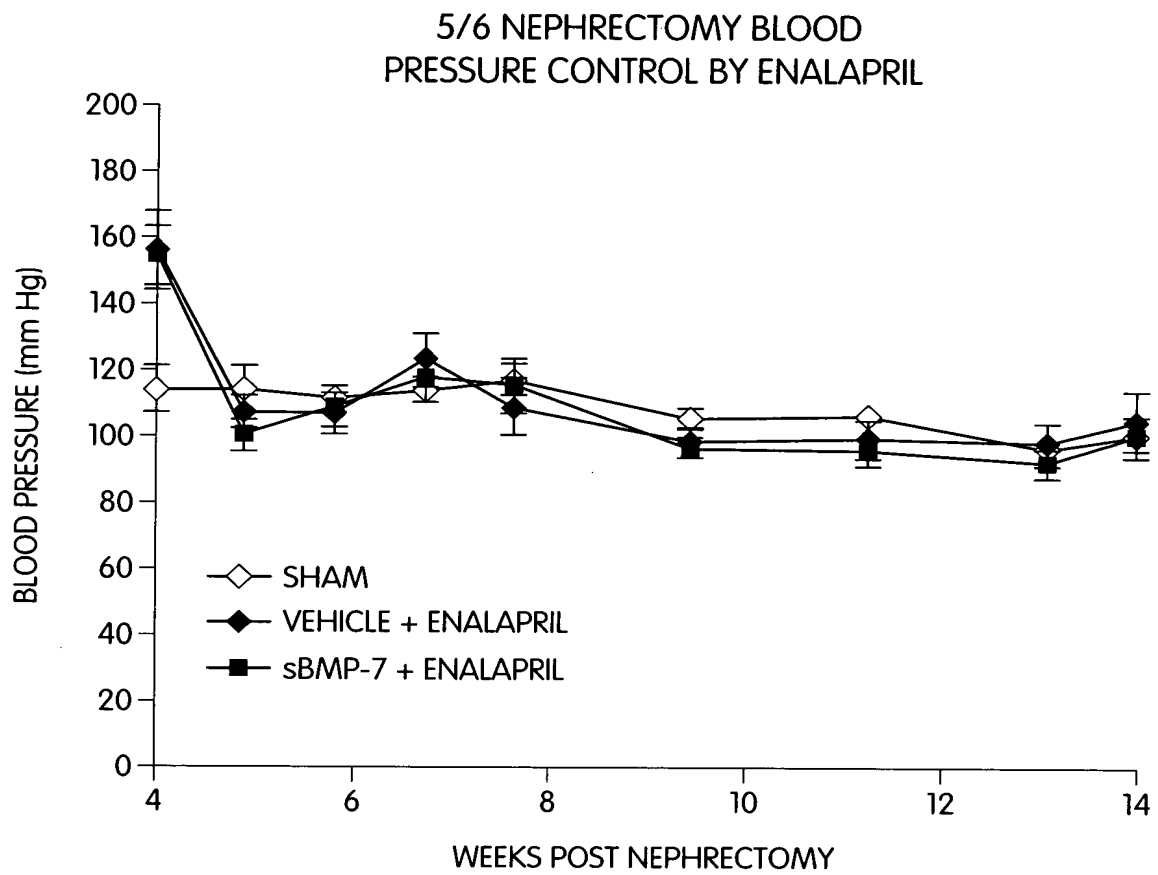
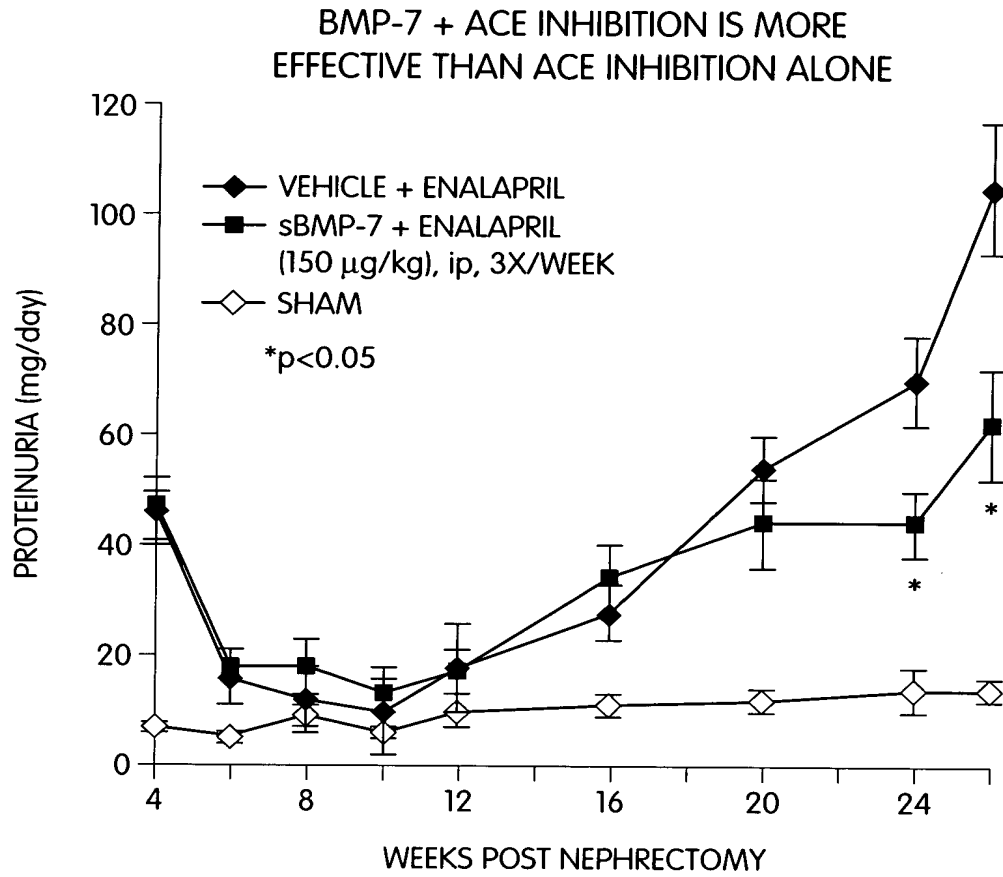
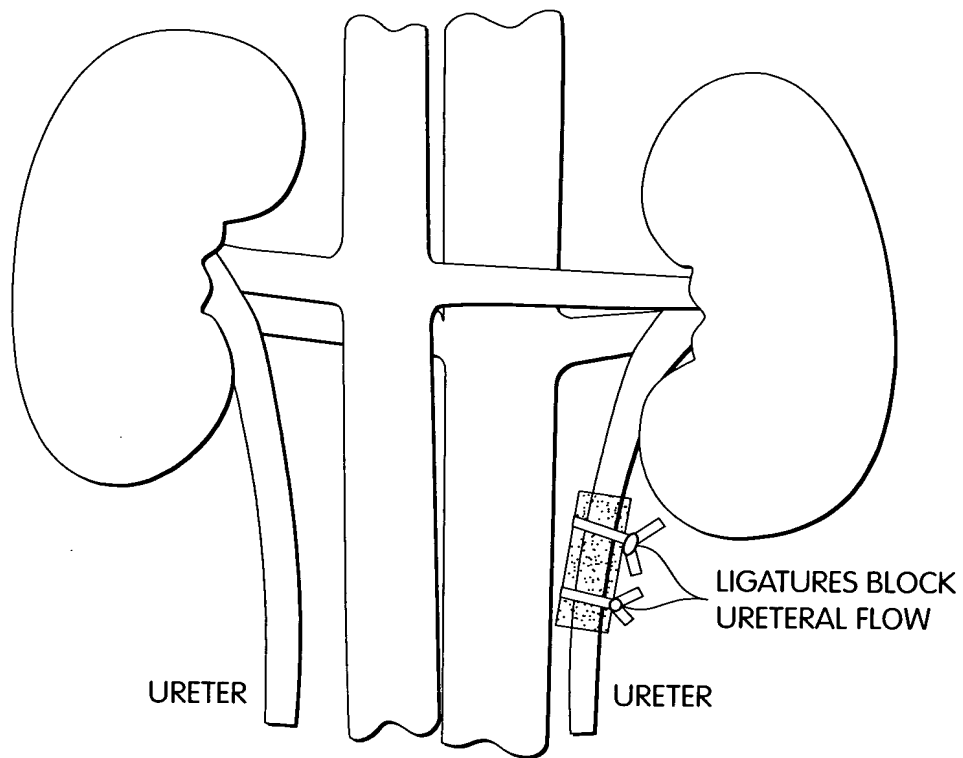


Fig. 15

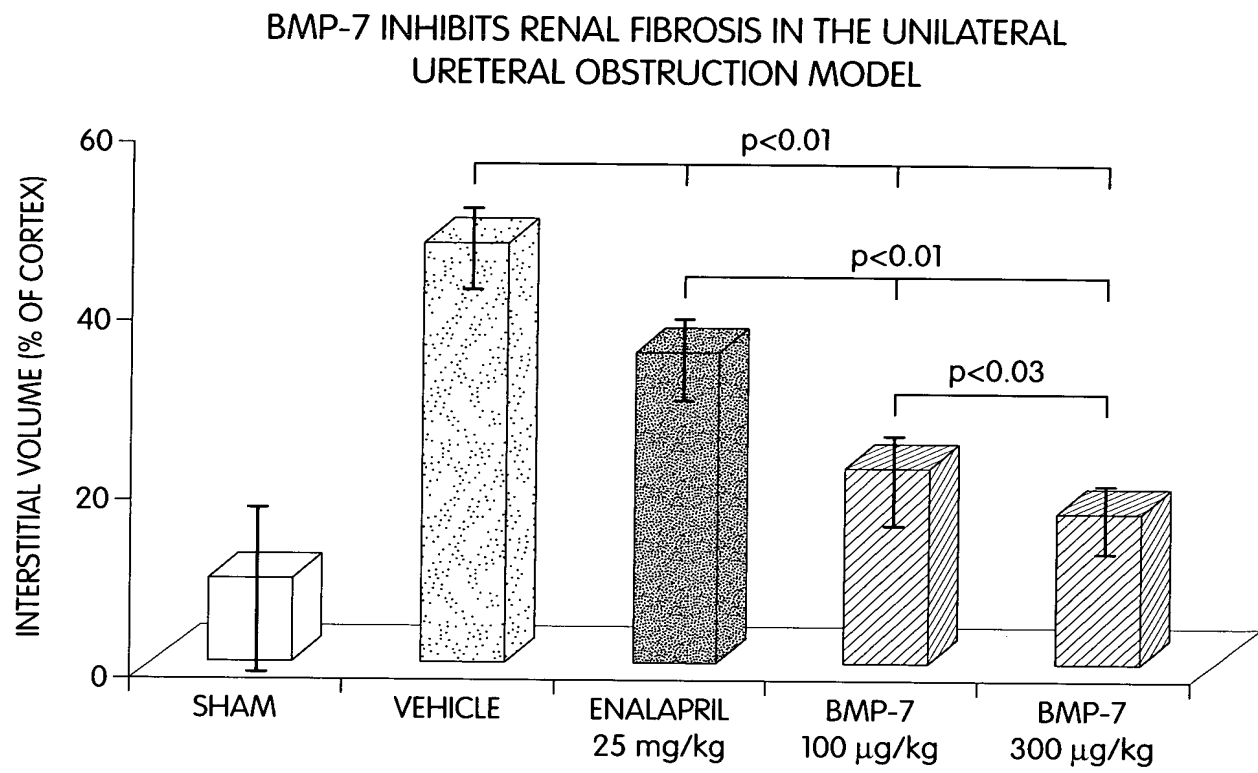
**Fig. 16**

UNILATERAL URETERAL OBSTRUCTION (UUO)
RENAL FIBROSIS MODEL



RAPID ONSET OF TUBULOINTERSTITIAL INFLAMMATION
AND FIBROSIS (HALLMARKS OF CRF)

Fig. 17

**Fig. 18**

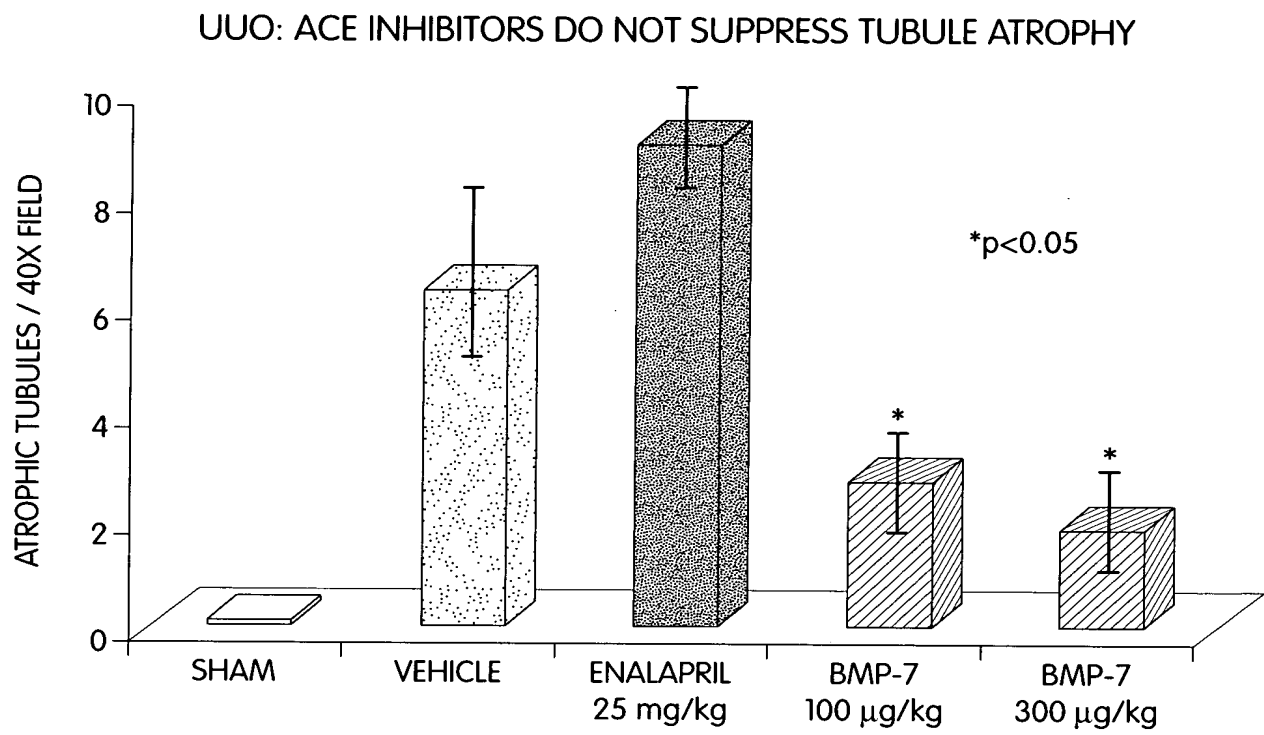


Fig. 19

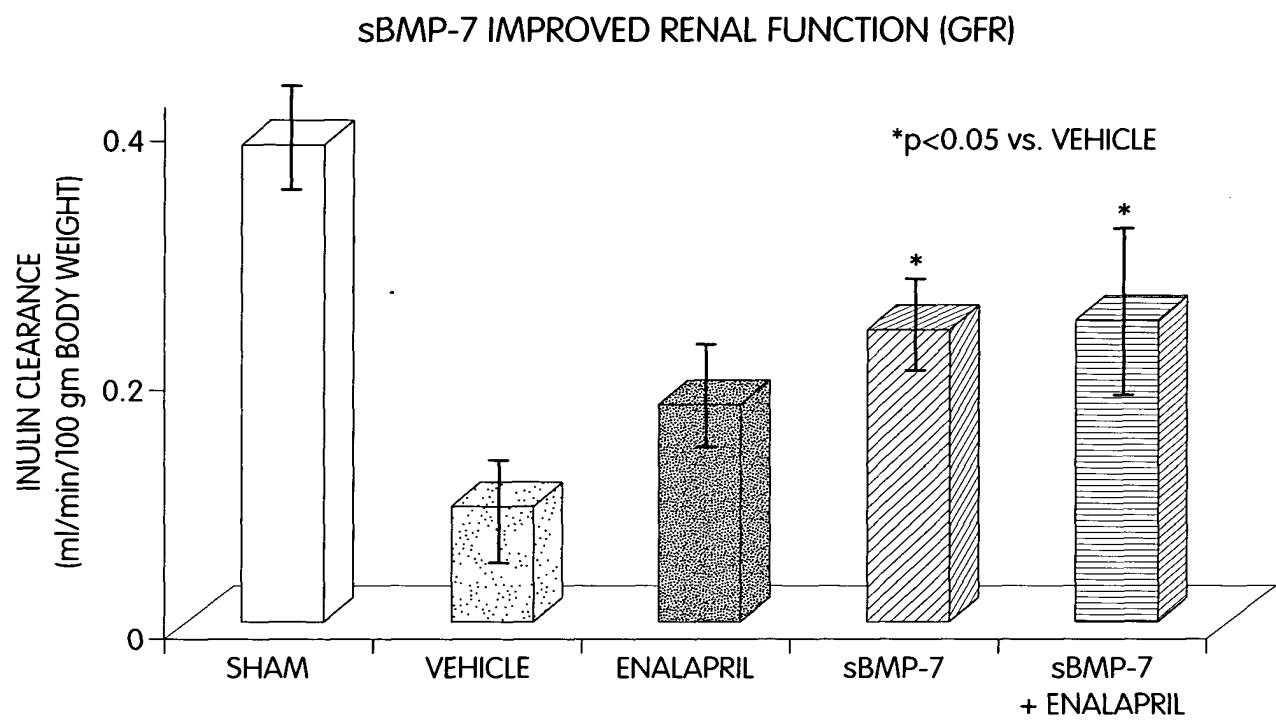


Fig. 20

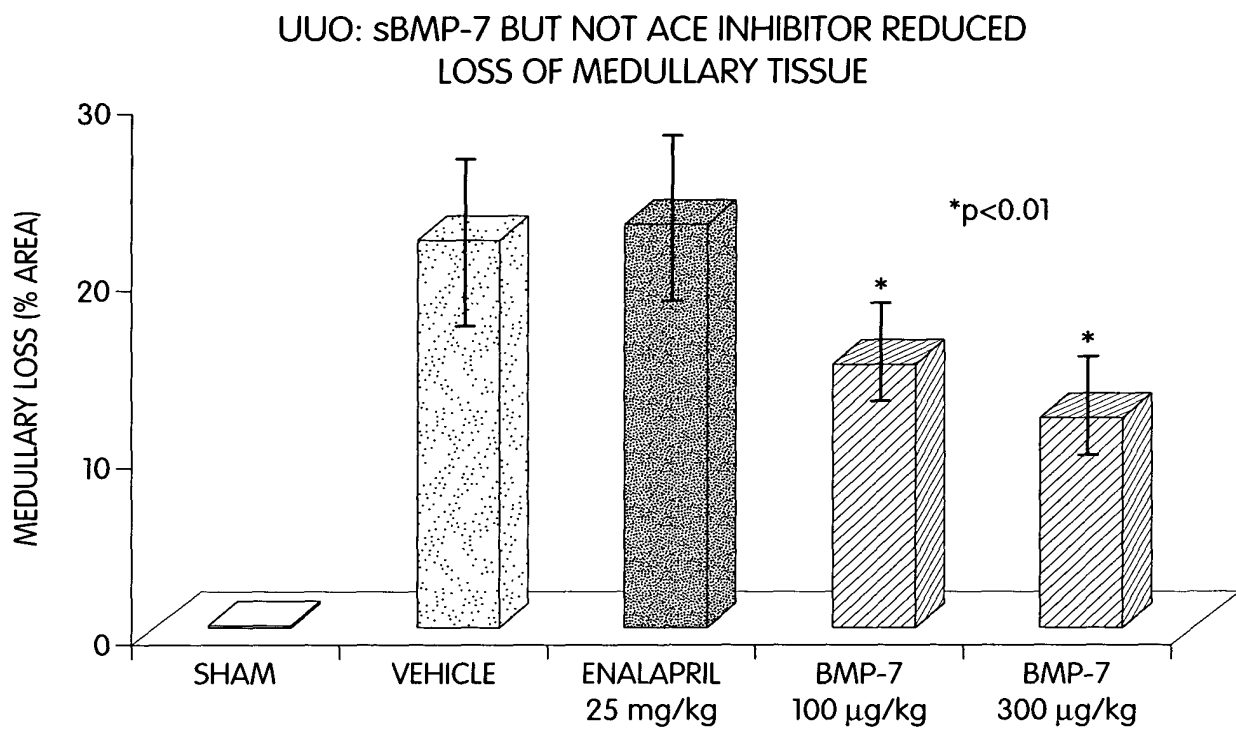
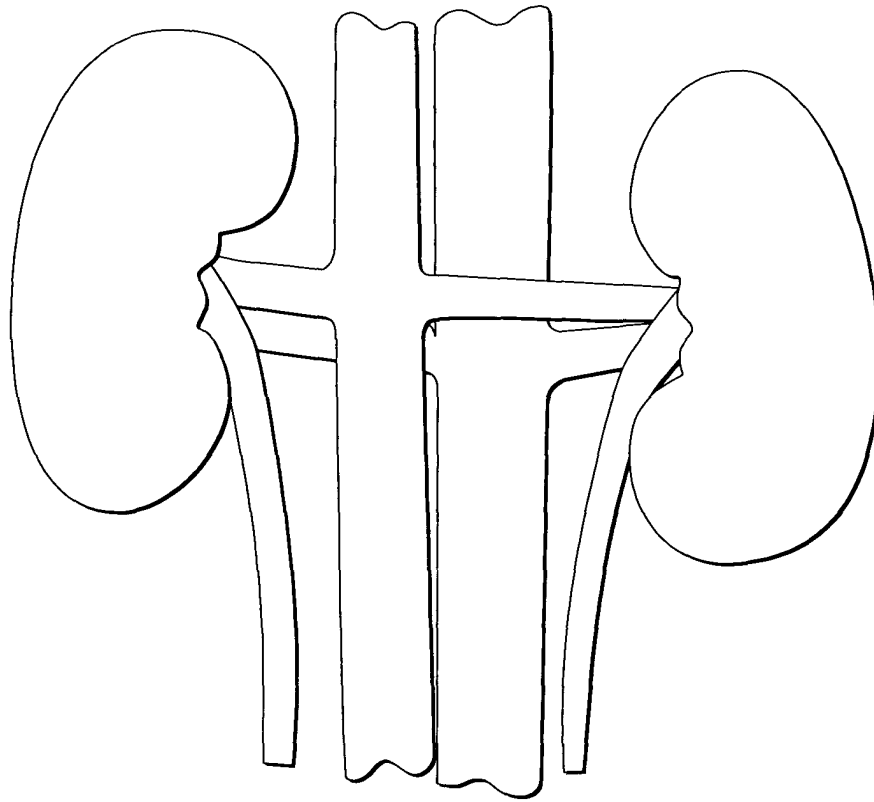


Fig. 21

STREPTOZOTOCIN-INDUCED RAT MODEL OF
DIABETIC NEPHROPATHY



- STREPTOZOTOCIN KILLS PANCREATIC β CELLS AND INDUCES TYPE I DIABETES
- MODEL OF PROGRESSIVE DIABETIC NEPHROPATHY

Fig. 22

BMP-7 IMPROVED GFR AT 32 WEEKS

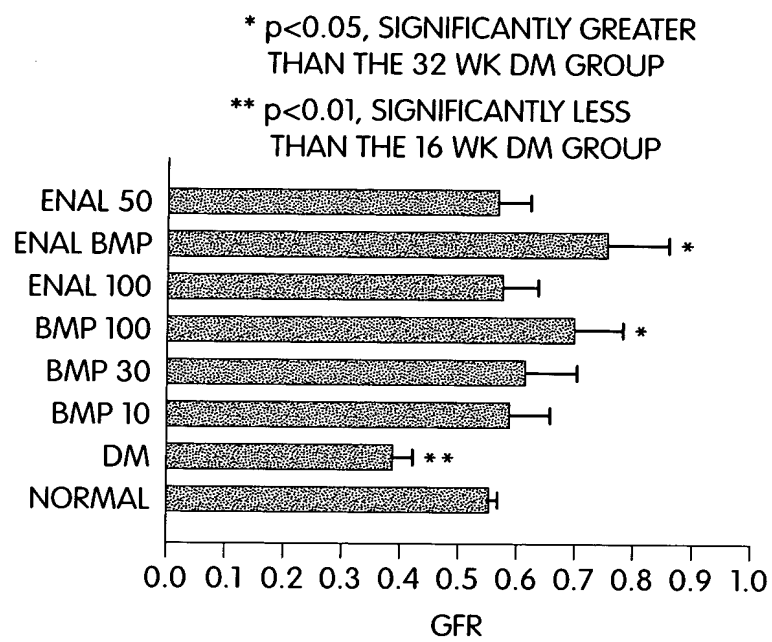


Fig. 23

BMP-7 REDUCED
PROTEINURIA TO NORMAL LEVELS

* $p < 0.05$, SIGNIFICANTLY GREATER
THAN THE 32 WK NORMAL GROUP

** $p < 0.01$, SIGNIFICANTLY GREATER
THAN THE 32 WK NORMAL GROUP

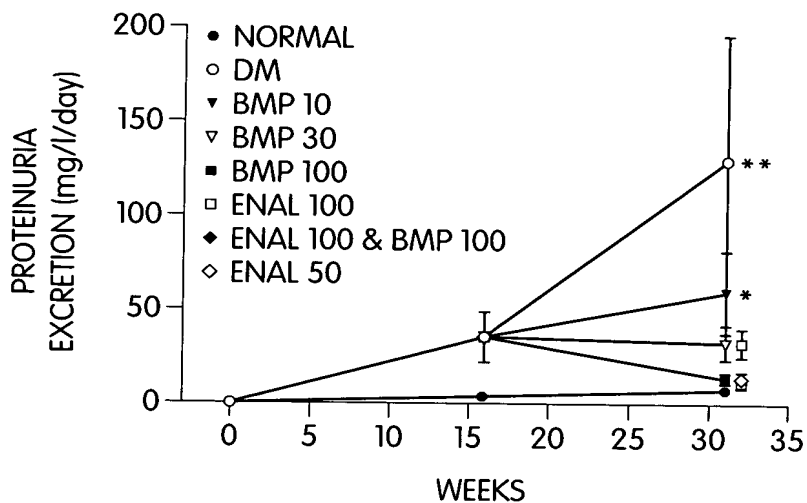
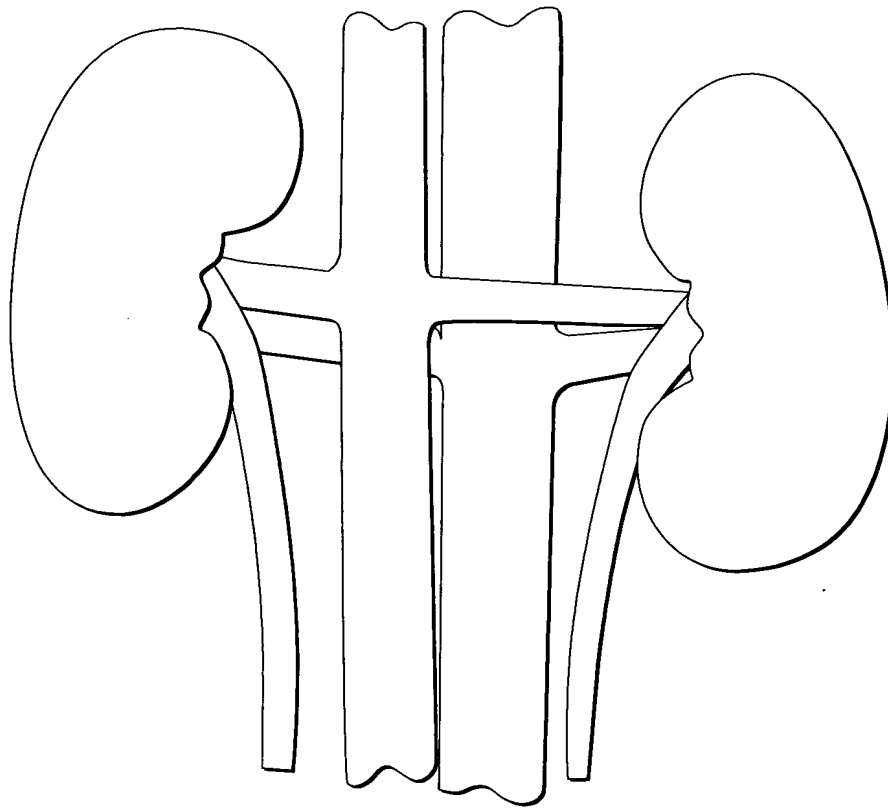


Fig. 24

ALLOXAN-INDUCED RAT MODEL
OF DIABETIC NEPHROPATHY



- ALLOXAN KILLS PANCREATIC β CELLS AND INDUCES TYPE I DIABETES
- MODEL OF PROGRESSIVE DIABETIC NEPHROPATHY

Fig. 25

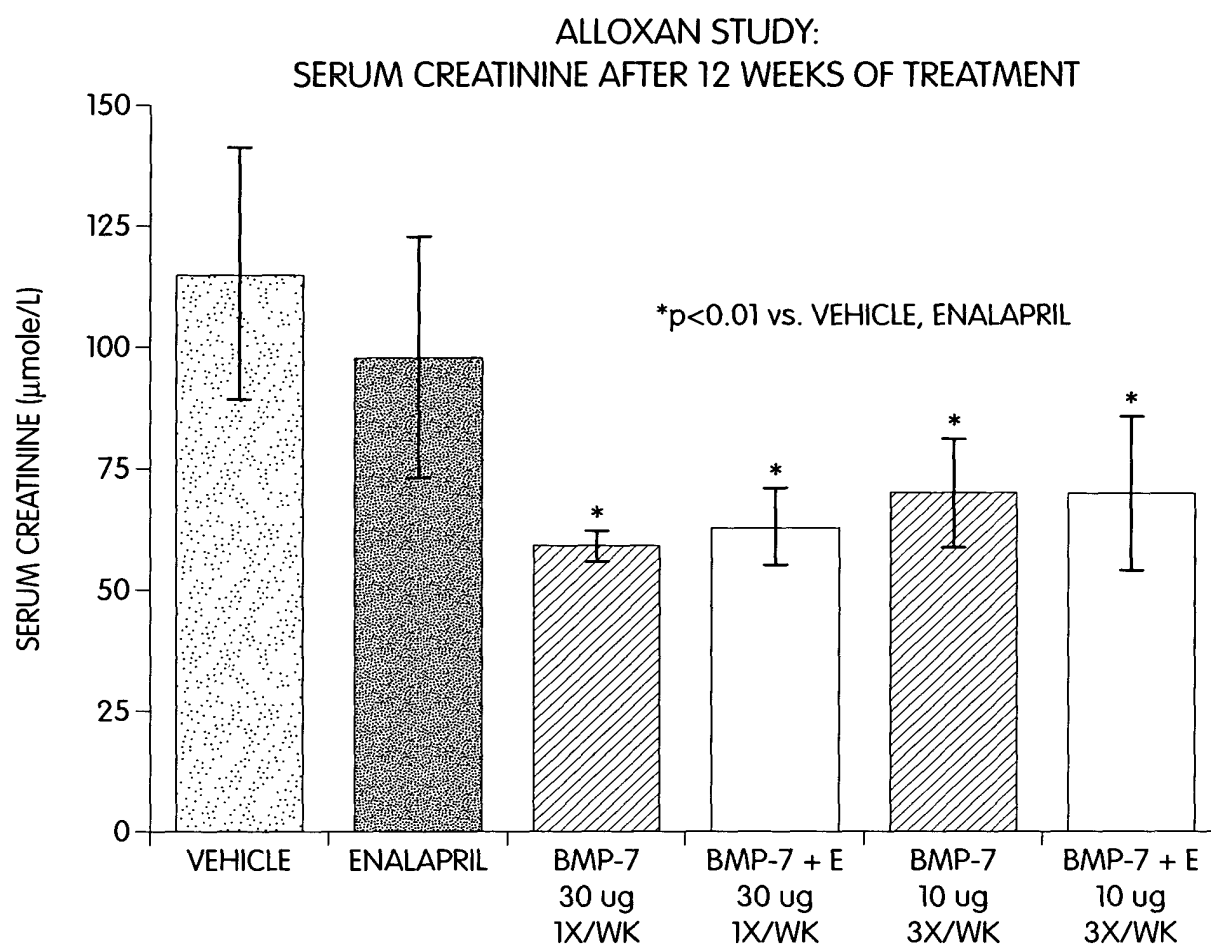


Fig. 26

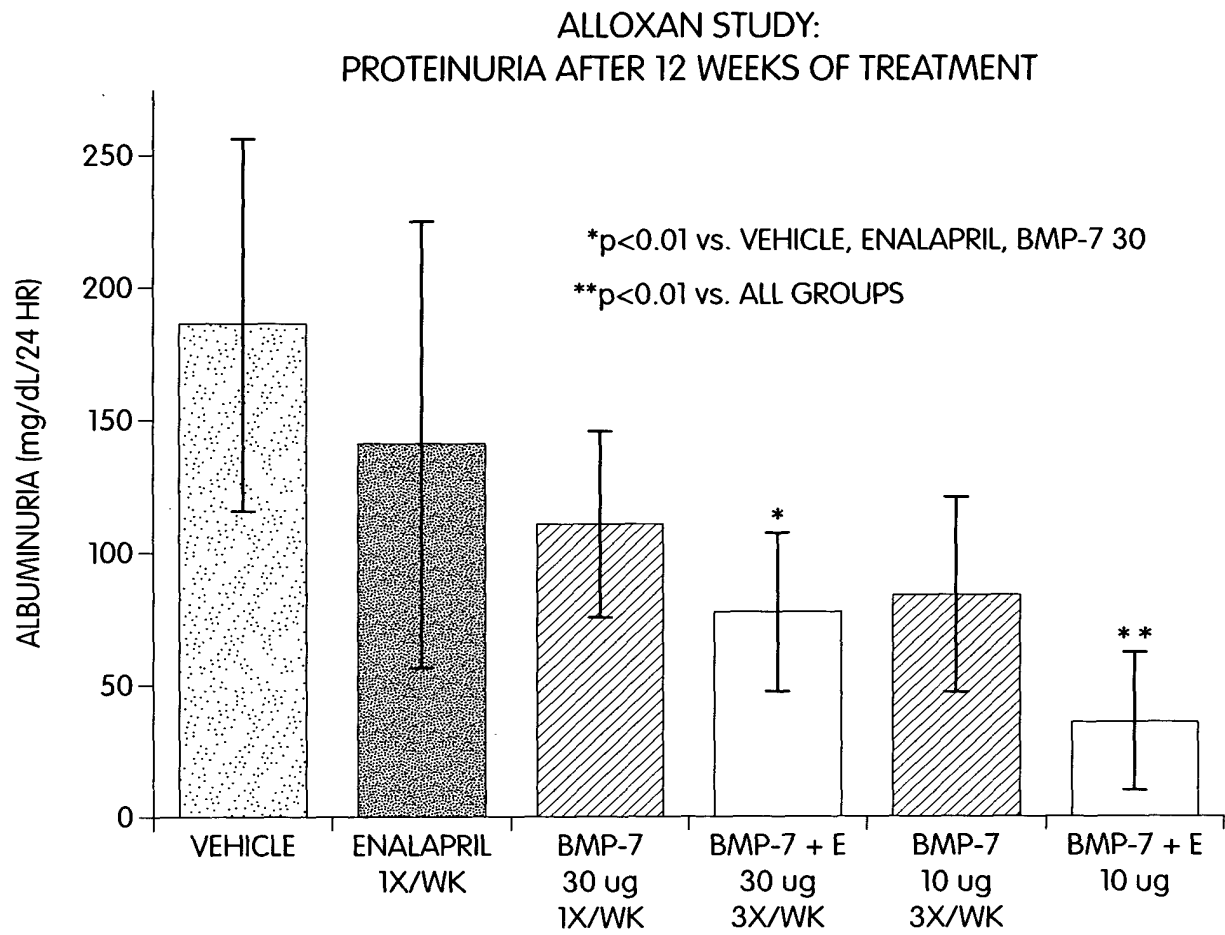


Fig. 27

Alignment Report of Fig1.meg ClustalW (Slow/Accurate, Gonnet)
 Wednesday, August 28, 2002 9:33 AM

	10	20	30	40	Majority
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
1	M H V R S L R A A A P H S F V	- - - - -	- - - - -	A L W A P	hOP1
1	M H V R S L R A A A P H S F V	- - - - -	- - - - -	A L W A P	mOP1
1	- - - - -	M T A L P G P	- - - - -	L W L L	hOP2
1	- - - - -	M A M R P G P	- - - - -	L W L L	mOP2
1	- - - - -	L A L L L P Q V L L G G A	- - - - -	L V P E	hBMP2
1	- - - - -	M A G A S R L L F L W L G C	- - - - -	F C V S	hBMP3
1	- - - - -	M I P G N R M L M V L C Q V L L G G A S	- - - - -	L I P E	hBMP4
1	- - - - -	M H L T V F L L K G I V G F	- - - - -	L W S C	hBMP5
1	M P G L G R R A Q W L C W W G L L C S C C G P P	- - - - -	- - - - -	L R P P	hBMP6
1	- - - - -	M P P Q Q G P C G H L L L L A L	- - - - -	L L P S	hGDF1
1	- - - - -	- - - - -	- - - - -	- - - -	mVgr1
1	- - - - -	M V W L R L W A F	- - - - -	L H I L	Vg1
1	- - - - -	M S G L R N T S E A V A V L A S L G L G M V	- - - - -	L L M F V	60A
1	- - - - -	M R A W L L L A V L A T F Q T I V R V A S T E D I S Q R F I A	- - - - -	I A P V	Dpp
1	- - - - -	M P P S G L R L L L L L P L W L L V L T P	- - - - -	G R P A	hTGfb1
1	- - - - -	M H Y C V L S A F L I L H L	- - - - -	V T V A	hTGfb2

Fig. 28-1

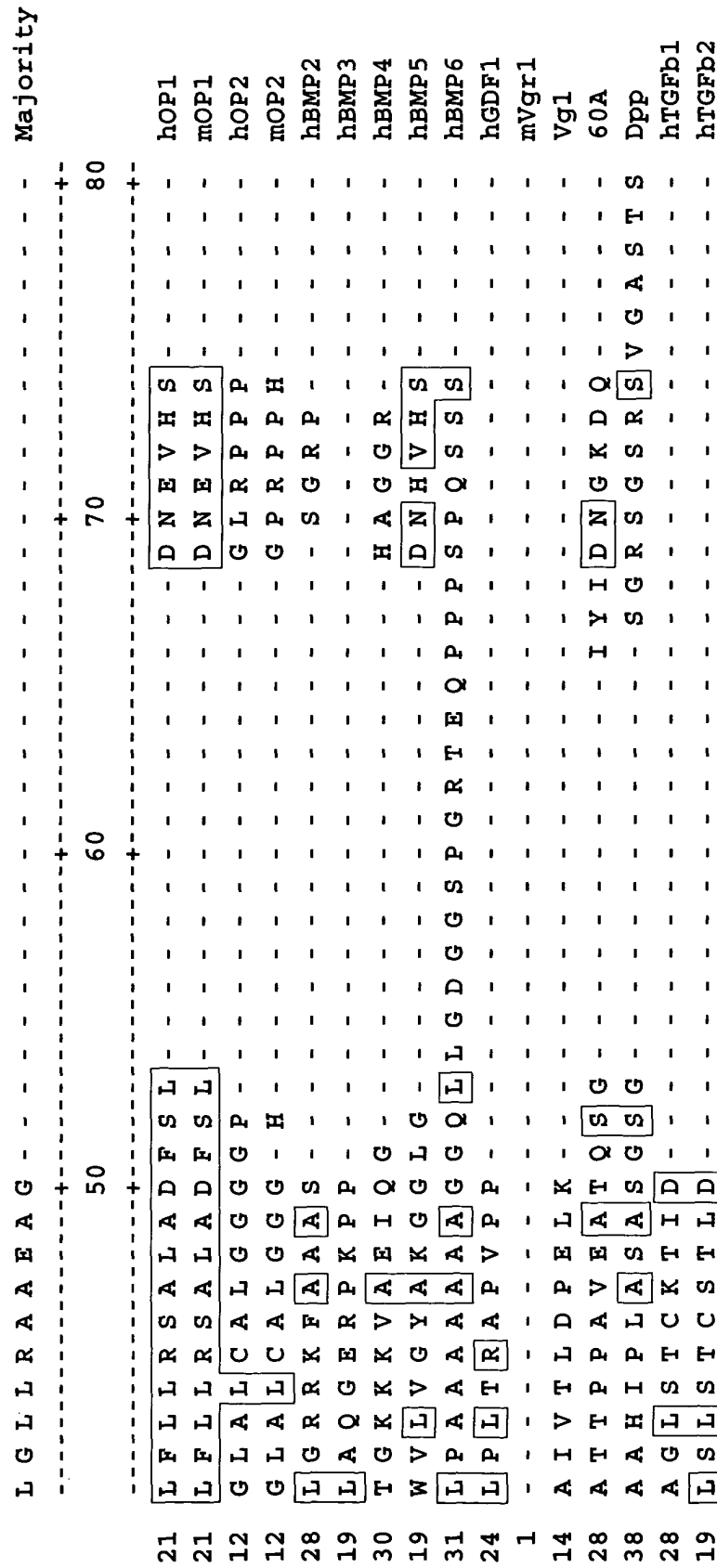


Fig. 28-3

Alignment Report of Fig1.meg ClustalW (Slow/Accurate, Gonnet)
Wednesday, August 28, 2002 9:33 AM

										Majority																															
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+																																									
										160																															
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+																																									
40	-	-	-	-	-	-	-	-	-	hOP1																															
40	-	-	-	-	-	-	-	-	-	mOP1																															
30	-	-	-	-	-	-	-	-	-	hOP2																															
29	-	-	-	-	-	-	-	-	-	mOP2																															
42	-	-	-	-	-	-	-	-	-	hBMP2																															
29	-	-	-	-	-	-	-	-	-	hBMP3																															
46	-	-	-	-	-	-	-	-	-	hBMP4																															
37	-	-	-	-	-	-	-	-	-	hBMP5																															
65	-	-	-	-	-	-	-	-	-	hBMP6																															
34	-	-	-	-	-	-	-	-	-	hGDF1																															
1	-	-	-	-	-	-	-	-	-	mVgr1																															
24	-	-	-	-	-	-	-	-	-	Vg1																															
50	-	-	-	-	-	-	-	-	-	60A																															
105	N	E	V	H	K	P	R	T	D	Q	L	E	N	S	K	N	K	S	K	Q	L	V	N	K	P	N	H	N	K	M	A	V	K	E	Q	R	S	H	H	K	Dpp
38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	hTGfb1	
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	hTGfb2	

Fig. 28-4

	170	180	190	200	Majority
40	S F I H R R L R S Q E				hOP1
40	S F I H R R L R S Q E				mOP1
30	G C P Q R R L G A R E				hOP2
29	T C P Q R R L G A R E				mOP2
42	- - - S S Q P S D E				hBMP2
29	- - - - - F P				hBMP3
46	- - - R S G Q S H E				hBMP4
37	S F I Y R R L R N H E				hBMP5
65	G F L Y R R L K T Q E				hBMP6
34	- - - - - G P				hGDF1
1	- - - - -				mVgr1
24	- - - - - R R				Vg1
50	- - - T I M H R V L S E D D				60A
145	K S H H R S H Q P K Q A S A S T E S H Q S S I E S I F V E E P T L V L D R E				Dpp
38	- - - - - M E L V K R K R				htGFb1
29	- - - - - M D Q F M R K R				htGFb2

Fig. 28-5

	210	220	230	240	Majority
51	-	-	-	-	R
51	-	-	-	-	R
41	-	-	-	-	R
40	-	-	-	-	R
49	-	-	-	-	S
31	-	-	-	-	-
53	-	-	-	-	R
48	-	-	-	-	R
76	-	-	-	-	R
36	-	-	-	-	-
1	-	-	-	-	R
26	-	-	-	-	-
61	-	-	-	-	L
185	V	A	S	I	N
46	-	-	-	-	-
37	-	-	-	-	-

Fig. 28-6

Alignment Report of Fig1.meg ClustalW (Slow/Accurate, Gonnet)
 Wednesday, August 28, 2002 9:33 AM

E	M	Q	R	E	I	L	S	V	L	G	L	P	H	R	P	R	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Fig. 28-8

Alignment Report of Fig1.meg ClustalW (Slow/Accurate, Gonnet)
 Wednesday, August 28, 2002 9:33 AM

	330	340	350	360	Majority
96	- - - - -	- - - - -	- - - - -	- - - - -	-
96	- - - - -	- - - - -	- - - - -	- - - - -	-
90	- - - - -	- - - - -	- - - - -	- - - - -	-
87	- - - - -	- - - - -	- - - - -	- - - - -	-
92	- - - - -	- - - - -	- - - - -	- - - - -	-
79	- - - - -	- - - - -	- - - - -	- - - - -	-
96	- - - - -	- - - - -	- - - - -	- - - - -	-
97	- - - - -	- - - - -	- - - - -	- - - - -	-
152	- - - - -	- - - - -	- - - - -	- - - - -	-
74	- - - - -	- - - - -	- - - - -	- - - - -	-
78	- - - - -	- - - - -	- - - - -	- - - - -	-
59	- - - - -	- - - - -	- - - - -	- - - - -	-
109	- - - - -	- - - - -	- - - - -	- - - - -	-
266	- - - - -	- - - - -	- - - - -	- - - - -	-
91	- - - - -	- - - - -	- - - - -	- - - - -	-
85	- - - - -	- - - - -	- - - - -	- - - - -	-
	ESGSPES	ESGSPES	ESGSPES	ESGSPES	Majority
	330	340	350	360	
96	- - - - -	- - - - -	- - - - -	- - - - -	hOP1
96	- - - - -	- - - - -	- - - - -	- - - - -	mOP1
90	- - - - -	- - - - -	- - - - -	- - - - -	hOP2
87	- - - - -	- - - - -	- - - - -	- - - - -	mOP2
92	- - - - -	- - - - -	- - - - -	- - - - -	hBMP2
79	- - - - -	- - - - -	- - - - -	- - - - -	hBMP3
96	- - - - -	- - - - -	- - - - -	- - - - -	hBMP4
97	- - - - -	- - - - -	- - - - -	- - - - -	hBMP5
152	- - - - -	- - - - -	- - - - -	- - - - -	hBMP6
74	- - - - -	- - - - -	- - - - -	- - - - -	hGDF1
78	- - - - -	- - - - -	- - - - -	- - - - -	mVgr1
59	- - - - -	- - - - -	- - - - -	- - - - -	Vg1
109	- - - - -	- - - - -	- - - - -	- - - - -	60A
266	- - - - -	- - - - -	- - - - -	- - - - -	Dpp
91	- - - - -	- - - - -	- - - - -	- - - - -	hTGfb1
85	- - - - -	- - - - -	- - - - -	- - - - -	hTGfb2

Fig. 28-9

Alignment Report of Fig1.meg ClustalW (Slow/Accurate, Gonnet)
 Wednesday, August 28, 2002 9:33 AM

	370	380	390	400	Majority
	- - - - -	- - - - -	- - - - -	- - - - -	V N L V
	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
113	T Q G P P L A S L Q D S H F L T D A D M V M S	- - - - -	- - - - -	- - - - -	hOP1
112	T Q G P P L A S L Q D S H F L T D A D M V M S	- - - - -	- - - - -	- - - - -	mOP1
97	- - - - -	R R L G R A D L V M S	- - - - -	- - - - -	hOP2
94	- - - - -	A H L G R A D L V M S	- - - - -	- - - - -	mOP2
99	- - - - -	L E R A A S R A N T V R S	- - - - -	- - - - -	hBMP2
91	- - - - -	L R E G N T V R S F R A A A E T	- - - - -	- - - - -	hBMP3
106	- - - - -	Y P E R P A S R A N T V R S	- - - - -	- - - - -	hBMP4
133	T P L T Q S P P L A S L H D T N F F L N D A D M V M S	- - - - -	- - - - -	- - - - -	hBMP5
192	S G S - G G A S P L T S A Q D S A F L N D A D M V M S	- - - - -	- - - - -	- - - - -	hBMP6
86	- - - - -	T L Q P C H V E E L G V A G N I V R H I P D R G A P T R	- - - - -	- - - - -	hGDF1
118	P G - - G G A S P L T S A Q D S A F L N D A D M V M S	- - - - -	- - - - -	- - - - -	mVgr1
69	- - - - -	D L C F V E E F N V P G S V I R V	- - - - -	- - - - -	Vg1
134	E G - - E Q Q K N F I T D L D K R A I D E S D I I M T	- - - - -	- - - - -	- - - - -	60A
273	- - - - -	P G L L T K S A N T V R S	- - - - -	- - - - -	Dpp
99	- - - - -	P E A D Y Y A K E V T R V L M	- - - - -	- - - - -	hTGfb1
94	- - - - -	S D E E Y Y A K E V Y K I D M P P	- - - - -	- - - - -	hTGfb2

Fig. 28-10



Fig. 28-11

Fig. 28-12

Fig. 28-13



Fig. 28-15

Fig. 28-16

Alignment Report of Fig1.meg ClustalW (Slow/Accurate, Gonnet)
 Wednesday, August 28, 2002 9:33 AM

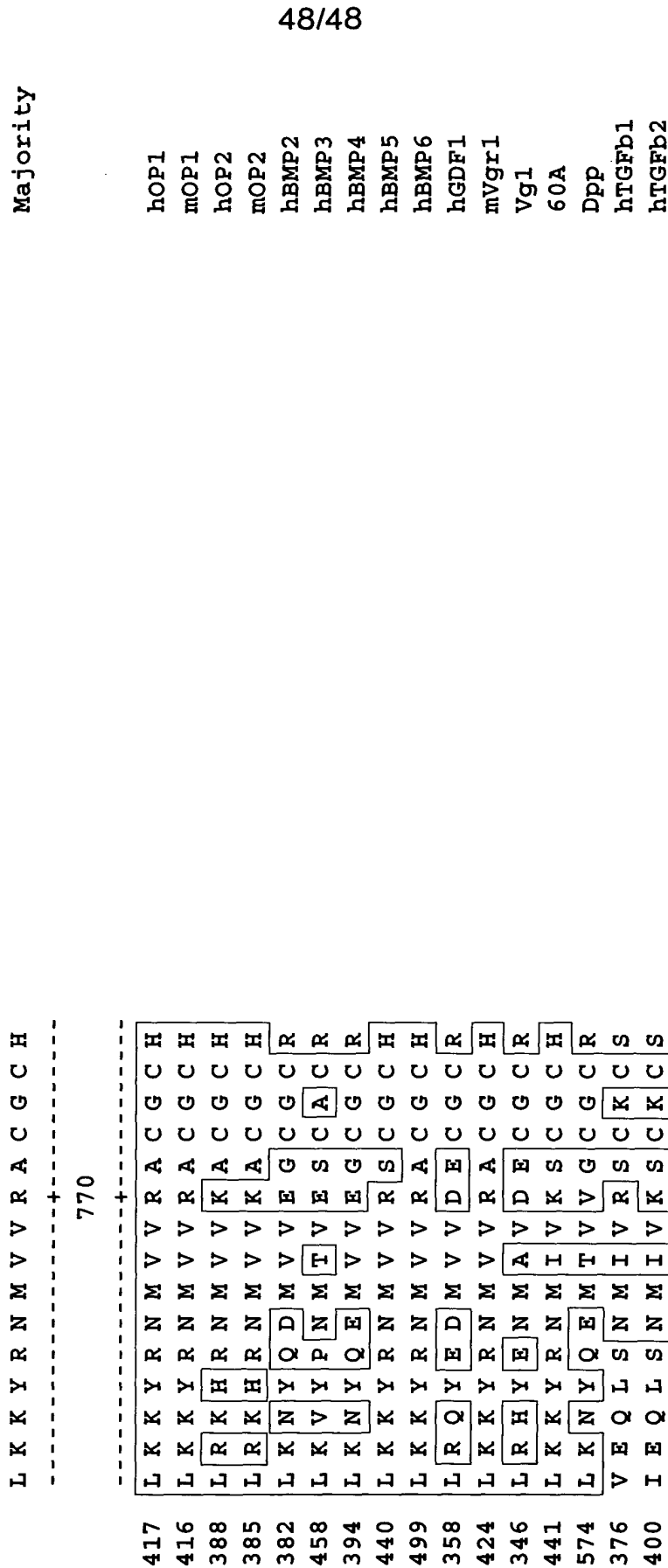
R Q D S - - - L R M S S V S D - - S - - - A C K K H E L Y V S F R - D Majority																																												
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650										660										670										680														
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309	N	Q	E	A	-	-	-	-	-	L	R	M	A	N	V	A	E	N	S	S	S	D	-	-	Q	R	Q	A	C	K	K	H	E	L	Y	V	S	F	R	-	D	hOP1		
308	N	Q	E	A	-	-	-	-	-	L	R	M	A	S	V	A	E	N	S	S	S	D	-	-	Q	R	Q	A	C	K	K	H	E	L	Y	V	S	F	R	-	D	mOP1		
280	P	Q	A	N	-	-	-	-	-	R	L	P	G	I	F	D	D	V	H	G	S	H	-	-	G	R	Q	V	C	R	R	H	E	L	Y	V	S	F	Q	-	D	hOP2		
277	P	H	P	N	-	-	-	-	-	K	L	P	G	I	F	D	D	G	H	G	S	R	-	-	G	R	E	V	C	R	R	H	E	L	Y	V	S	F	R	-	D	mOP2		
285	K	H	K	-	-	-	-	-	-	Q	R	K	R	L	K	S	-	-	-	-	-	-	-	-	-	-	-	-	S	C	K	R	H	P	L	Y	V	D	F	S	-	D	hBMP2	
343	H	R	K	S	Q	T	L	Q	F	D	E	Q	T	L	K	K	A	R	R	K	Q	W	I	E	P	R	N	C	A	R	R	Y	L	K	V	D	F	A	-	D	hBMP3			
295	K	H	H	S	-	-	-	-	-	Q	R	A	R	K	K	N	K	-	-	-	-	-	-	-	-	-	-	-	N	C	R	R	H	S	L	Y	V	D	F	S	-	D	hBMP4	
332	H	Q	D	S	-	-	-	-	-	S	R	M	S	S	V	G	D	Y	N	T	S	E	-	-	Q	K	Q	A	C	K	K	H	E	L	Y	V	S	F	R	-	D	hBMP5		
391	S	Q	D	V	-	-	-	-	-	A	R	V	S	S	A	S	D	Y	N	S	S	E	-	-	L	K	T	A	C	R	K	H	E	L	Y	V	S	F	Q	-	D	hBMP6		
252	R	R	D	-	-	-	-	-	-	-	A	E	P	V	L	G	G	-	-	-	-	-	-	-	P	G	G	A	C	R	A	R	R	L	Y	V	S	F	R	-	E	hGDF1		
316	S	Q	D	V	-	-	-	-	-	S	R	G	S	G	S	S	D	Y	N	G	S	E	-	-	L	K	T	A	C	K	K	H	E	L	Y	V	S	F	Q	-	D	mVgr1		
243	R	R	K	R	-	-	-	-	-	-	S	Y	S	K	L	P	F	T	-	-	-	-	-	-	A	S	N	I	C	K	K	R	H	L	Y	V	E	F	K	-	D	Vg1		
333	R	K	K	S	-	-	-	-	-	V	S	P	N	N	V	P	L	L	E	P	M	E	-	-	-	S	T	R	S	C	Q	M	Q	T	L	Y	I	D	F	K	-	D	60A	
475	R	R	P	-	-	-	-	-	-	T	R	R	K	N	H	D	D	-	-	-	-	-	-	-	-	-	-	-	T	C	R	R	H	S	L	Y	V	D	F	S	-	D	Dpp	
280	L	D	T	N	-	-	-	-	-	Y	C	F	S	S	T	E	K	-	-	-	-	-	-	-	-	-	-	-	N	C	C	V	R	Q	L	Y	I	D	F	R	-	D	hTGfb1	
304	L	D	A	A	-	-	-	-	-	Y	C	F	R	N	V	Q	D	-	-	-	-	-	-	-	-	-	-	-	N	C	C	L	R	P	L	Y	I	D	F	K	R	-	D	hTGfb2

Fig. 28-17





Alignment Report of Fig1.meg ClustalW (Slow/Accurate, Gonnet)
Wednesday, August 28, 2002 9:33 AM



Decoration 'Identity to human OP-1' " Box residues that match hOP1 exactly.

Fig. 28-20